

P85

## Investigation of optimum conditions for emulsification of fish oil

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### Abstract

The reaction ability between insoluble fish-oil and soluble lipase, is increased as expansion of contact areas between fish oil and lipase. Thus, we emulsified fish oil and water, and established the optimum conditions of emulsion. Emulsifiers used were CM-chitin, gelatin, albumin, Tween-60 and Tween-80. Emulsifying activities of emulsifiers were investigated in various conditions such as concentration, water-oil ratios, pH and temperature. The emulsifying activity of gelatin was 10~20% higher than CM-chitin, albumin, Tween-60 and Tween-80. Furthermore, the emulsifying activity of 1%(w/v)gelatin was the highest among tested emulsifiers. This was decreased with increasing concentration above 1% gelatin solution. The optimum conditions of water-oil ratio, pH and temperature were 40%, pH 7~8 and 40°C, respectively.

### References

1. Le Denmat, M., Anton, M. and Beaumal, V, Characterisation of emulsion properties of interface composition in O/W emulsion prepared with hen egg yolk, plasma and granules (2000) *Food hydrocolloids*, 14, 539~549
2. Pearce. K. N, Kinsella. J. E, Emulsifying properties of proteins : Evolution of turbidimetric Technique (1978) *J. Agric. Food. Chem*, 26, 716~723